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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/777,355	02/05/2001	Terry McDaniel	SEAG5130/JAS	5182

7590

11/24/2003

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EXAMINER

DINH, TAN X

ART UNIT	PAPER NUMBER
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2653

DATE MAILED: 11/24/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/777,355

Applicant(s)

MCDANIEL ET AL.

Examiner

TAN X. DINH

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) ____ is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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- 1) The amendment/preliminary amendment filed 9/28/2001 is acknowledged.
- 2) This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.
- 3) The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The following title is suggested:

MAGNETO-OPTICAL RECORDING MEDIUM HAVING A PLURALITY OF
FERROMAGNETIC LAYERS.
- 4) The drawings are objected to because: the magnet "30" is not appear in figure 2. Correction is required.

INFORMATION HOW TO EFFECT DRAWING CHANGES

a) REPLACEMENT DRAWING SHEETS.

Drawing changes may be made by presenting replacement figures which incorporate the proposed changes and which comply with 37 CFR § 1.84. An explanation of the changes made must be presented in either in the drawing amendments or remarks section of the amendment.

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Any replacement drawing sheet must be identified in the top margin as " Replacement Sheet " and include all of the figures appearing on the immediate prior version of the sheet, even though only one figure may be amended. The figure or figure number of the amended drawing should not be labeled as "amended"

If the changes to the drawing figure(s) are not approved by the examiner, applicant will be notified of any required corrective action in the next Office action. No further drawing submission will be required, unless applicant is notified.

Identifying indicia, if provided, should include the title of the invention, inventor's name, and application serial number or docket number (if any) if an application serial number has not been assigned to the applicant. If this information is provided, it must be place on the front of each sheet and centered within the top margin.

b) ANNOTATED DRAWING SHEETS.

A marked-up copy of any amended drawing figure, including annotations indicating the changes made, may be submitted or required by the Examiner. The annotated drawing sheet must be clearly labeled as " Annotated Marked-up Drawings " and accompany the replacement sheets.

c) TIMING OF CORRECTIONS.

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Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR §1.85(a). Failure to take corrective action within the set period will result in ABANDONMENT of the application.

If corrected drawings are required in a Notice Of Allowability (PTO-37), the new drawings MUST be filed within the *THREE MONTHS* shortened statutory period set for reply in the "NOTICE OF ALLOWABILITY". Extensions of time may NOT be obtained under the provisions of 37 CFR §1.136 for filing the corrected drawings after the mailing of a NOTICE OF ALLOWABILITY.

5) The information in the "CROSS-REFERENCE TO RELATED APPLICATION" was incomplete. The application filed on 2/5/2001 under name of Victora et al (docket No. S5131) must be listed on this section with US serial number.

6) Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such

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as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The ABSTRACT is too long and more than 150 words. A new abstract is required in next communication.

7) Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase " extremely high coercivity " and " very high write temperature " (claim 1, line 9; claim 18, line 8) render(s) the claim(s) indefinite because the coercivity and the write temperature in magneto-optical recording could all be considered as " extremely high " or " very high ". The resulting claim(s), therefore, do not clearly set forth the metes and bounds of the patent protection desired.

The phrase " a thickness of zero to 5nm " (claim 5) is questionable. The thickness of a layer can not be zero as claimed.

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The phrase " the layer " (claim 7, line 2) is unclear and cannot be understood. Is this indicated to " the copy layer " or " the write layer " ?.

The notation "." in claim 14, line 5 is also questionable. This notation "." only uses at the end of the claim, not in the middle as appeared in claim 14.

Claim 17 can not depend on claim 18, which is not a precedent claim.

Claim(s) 2-17 incorporate the indefiniteness of claim(s) 1 by virtue of their dependency thereon.

8) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9) This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

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claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C.103[®] and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10) Claims 1,2 and 7, as understood by the meaning of 112, 2nd above, are rejected under 35 U.S.C. 103(a) as being unpatentable over KIM (6,141,297).

KIM discloses a magneto-optical recording medium as claimed in claims 1 and 18 having a source of heat (Fig.9, laser beam), a substrate (Fig.9, substrate 21), a write layer comprises ferromagnetic material (column 6, lines 21-30. In this case, the recording layer (write layer) is formed of TbFeCo, which is ferromagnetic material), a copy layer comprises ferromagnetic material (column 6, lines 1-11. In this case reproduction layer (copy layer) is formed of Co/Pt, which is ferromagnetic material), except to specifically show that the coercivity force of copy layer is less than write layer. It would have been

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obvious to use a copy layer has coercivity force less than write layer in KIM's magneto-optical storage medium because:

The fabricating of magneto-optical recording medium with ferromagnetic materials have been known in the art, the ferromagnetic materials have H_c which decreases around the Curie temperature and allow data recording based on this phenomenon. Typical ferromagnetic materials which common used in magneto-optical recording medium such as Co/Pt multilayers and TbFeCo. Co/Pt multilayers have the advantage of larger perpendicular magnetic anisotropy, larger Kerr rotation at short wavelengths, lower coercivity force and excellent environmental stability. Therefore, anyone with ordinary skill in the art would use a copy layer of Co/Pt with less coercivity force in KIM's magneto-optical medium for improving the resolution in high density recording and reproducing system.

As to claims 2 and 7, KIM shows write layer comprises TbFeCo and copy layer comprises Co/Pt in column 6, lines 21-30 and column 6, lines 1-11).

11) Claims 3,4,5,6 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over KIM (6,141,297) and UTSUNOMIYA et al (5,593,789).

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KIM discloses all the subject matter claimed as in claims 3,4 and 17, except to specifically show an intermediate layer of Pt. UTSUNOMIYA et al from same field teaches a magneto-optical recording medium having an intermediate layer of Pt (figure 6, intermediate layer and column 13, lines 29-65). Since the method as taught by UTSUNOMIYA et al is old and well known, it would have been obvious to someone within the level of skill in the art at the time of the invention was made to use an intermediate layer of Pt in KIM's magneto-optical recording medium as claimed.

As to claims 5 and 6, UTSUNOMIYA et al shows the intermediate layer having thickness of 1\AA to 28\AA (see column 13, line 66 to column 14, line 9. It is noted that $10\text{\AA} = 1\text{nm}$ and $28\text{\AA} = 2.8\text{nm}$).

12) Claims 8-16 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

13) The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Applicant is reminded that in amending in response to a rejection of claims, the patentable novelty must be clearly shown in view of the state of the art disclosed by the references cited and the objection made. Applicant must also show how the amendments avoid such references and objections. See 37 CFR §1.111(c).

FARRUGGIA et al (5,700,540), VICTORA et al (6,649,254), McDANIEL et al (6,226,233) and BELSER et al (5,889,641) discloses a magneto-optical recording medium having a recording layer of ferromagnetic material, a reproducing layer of ferromagnetic material and an intermediate layer.

14) Any inquiry concerning this communication or earlier communications from the Examiner should be directed to TAN DINH whose telephone number is (703)308-4859. The examiner can normally be reached on Monday - Friday from 8:00AM to 5:30PM.

The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4750.



TAN DINH
PRIMARY EXAMINER
November 19, 2003